

# GOVT. DEGREE COLLEGE, AVANIGADDA

## CO - PO Attainment Calculation Process

Quality Education in Higher Educational institutions is a major task in the present educational scenario. The CO's and PO's must be attained up to the mark. Then only the quality education concept can be completed fully. The college has evolved a through process of calculating CO and PO procedure according to the availability & possibilities at the institution. The B.Sc (Mathematics, Physics, Chemistry) Programme calculation is given here as example.

**The procedure we followed is**

### Step 1: Defining PO's

**Title of the Programme: B.Sc (Mathematics, Physics, Chemistry)**

#### Programme Outcomes

- PO 1:** This course forms the basis of science for coherent understanding of the academic field to pursue multi and inter-disciplinary science careers in future. (MPC)
- PO 2:** Able to plan and execute experiments or investigations, analyse and interpret data information collected using appropriate methods (Practical Paper)
- PO 3:** It helps to develop scientific temper and thus can prove to be more beneficial for the society as the scientific developments can make a nation or society to grow at a rapid pace through research. (Renewable Energy Project)
- PO 4:** Students can apply discrete probability distributions. (Survey).
- PO 5:** Discuss, debate and communicate in a clear and logical way, with graduates other fields. (Seminar).
- PO 6:** Demonstrate skills and competencies to conduct scientific experiments & data analysis.
- PO 7:** Bachelor of Science offers theoretical as well as practical knowledge about different subject areas.
- PO 8:** Knowledge acquired through field trips/industrial tours is useful for their job work.

## Step 2: Defining CO's

### Course Outcomes for the Course "MECHANICS, WAVES & OSCILLATIONS"

- CO 1:** Understand Newton's laws of motion and motion of variable mass system and its application to rocket motion and the concepts of impact parameter, scattering cross section.
- CO 2:** Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.
- CO 3:** Appreciate the formulation of the problem of coupled oscillations and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.
- CO 4:** Apply the rotational kinematic relations, the principle and working of gyroscope and its applications and the precessional motion of a freely rotating symmetric top.
- CO 5:** Comprehend the general characteristics of central forces and the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.
- CO 6:** Examine phenomena of simple harmonic motion and the distinction between undamped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.
- CO 7:** Figure out the formation of harmonics and overtones in a stretched string and acquire the knowledge on Ultrasonic waves, their production and detection and their applications in different fields.

## Step 3: Mapping CO's with PO's

CO - PO Mapping (Weightage)								
CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	3	1	1	1	1	1	1	1
CO2	1	3	1	2	1	2	1	1
CO3	1	1	1	1	3	1	1	1
CO4	1	1	1	1	1	1	1	3
CO5	1	1	3	1	1	1	1	1
CO6	1	1	2	1	1	1	1	1
CO7	1	3	1	1	2	3	2	1

## Step 4: CO – PO Attainment Calculation.

➤ The attainment will be done by using both Direct Assessment and Indirect Assessment.

### A. Direct Assessment

- In this method, the marks obtained by students in mid exams, assignments, student seminars, student attendance and external examinations will be considered.
- The marks secured by the students in the internal exams, assignments and student seminars will be entered as per the respective CO assigned for each question in the question paper.
- The attainment % of CO1, CO2 etc. of each student will be calculated.
- The attainment % of CO1, CO2 etc. will be calculated by considering the number of students scored above 40%.
- Then assign the attainment levels for CO1, CO2 etc. by considering the following rubrics.

Attainment %	Attainment Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0

- Now we can get the weighted average of CO1, CO2 etc. for the internal marks, attendance and external marks in Direct Assessment. (The weight for internal marks is 20%, attendance is 5% and external marks is 75%)

### B. Indirect Assessment

- In this method, the perceptions of the students on attainment of the course outcomes in the respective course will be collected through a course end survey in 5 rating scale at the end of the semester.
- By using the survey results, the weighted average of CO1, CO2 etc. will be calculated.

### C. Calculation of weighted average of CO attainment values from both Direct Assessment and Indirect Assessment

- Now calculate the weighted average of CO attainment values for CO from both Direct Assessment and Indirect Assessment. (The weight for Direct Assessment is 90% and for Indirect Assessment is 10%)
- According to PO-CO matrix & CO attainment value, PO attainment for the particular course is calculated using the formula.

*Attainment of PO*

$$\begin{aligned} &= \frac{CO\ 1\ Attainment\ Value \times PO\ 1\ Weightage\ in\ CO\ 1}{Total\ Weightage\ of\ PO\ 1} \\ &+ \frac{CO\ 1\ Attainment\ Value \times PO\ 2\ Weightage\ in\ CO\ 1}{Total\ Weightage\ of\ PO\ 1} \\ &+ \frac{CO\ 1\ Attainment\ Value \times PO\ 3\ Weightage\ in\ CO\ 1}{Total\ Weightage\ of\ PO\ 1} \end{aligned}$$

- Now we will get Average % of PO Attainment for a course in one semester.
- In this way, we will calculate for all the courses in the semester.
- At the end of the semester, we will get Semester wise Average Attainment of Programme Outcomes by averaging all the PO's attained for all courses in that particular semester.
- This process will be carried for all the six semesters.
- At the last, we will calculate overall PO attainment of the particular programme, by averaging all the PO's attained in all semesters of the programme.

## Overall CO – PO Average Attainment

Semester	PO1	PO2	PO3	PO4	PO5	PO6
I SEM						
II SEM						
III SEM						
IV SEM						
V SEM						
VI SEM						
SUM						
<b>AVG</b>						

- The same process will be done for all the programmes offered by the institution.

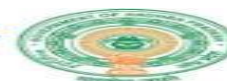
# GOVT. DEGREE COLLEGE, AVANIGADDA

## CO – PO ATTAINMENT CALCULATION

PROGRAMME NAME: B.SC (Mathematics, Physics, Chemistry)

2021-22 Admitted Batch; SEM: I

Title of the Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
ENG	90.49	90.22	90.42	90.52	90.42	90.48	90.28	90.50
TEL/HID	95.88	96.14	95.91	95.79	96.03	95.73	96.15	95.51
MATHS	53.05	49.21	51.64	51.04	51.04	52.27	52.27	49.62
PHYSICS	98.54	98.81	98.80	98.57	98.69	98.74	98.57	97.27
CHEMISTRY	31.30	31.21	31.30	31.19	31.26	31.21	31.29	31.30
TOTAL	369.26	365.59	368.07	367.10	367.44	368.44	368.56	364.20
Attainment %	73.85	73.12	73.61	73.42	73.49	73.69	73.71	72.84



**CO - PO ATTAINMENT**  
**2021-2022 Admitted Batch**

CLASS :- I.B.Sc

SEMESTER - I

SUBJECT :- ENGLISH

FACULTY :- G. MANI BABU

			Mid - I			Assignment	Student Seminar	CO1	CO2	CO3	CO4	CO5	Attendance	External Marks	
CO Number			1	4	5	2	5								
Question No			1	2	3	1	1	CO Atmt	CO Atmt	CO Atmt	CO Atmt	CO Atmt			
Max. Marks			5	5	10	5	5						5	75	
S.No.	HT Number	Name of the Student	Marks Obtained			Marks Obtained						Marks Obtained			
1	2129125052002	DVN Raju	1	5	10	4	4	20.00	80.00		100.00	93.33	5	63	
2	2129125052004	Ch.Dijendra Kumari	5	5	6	5	4	100.00	100.00		100.00	66.67	1	38	
3	2129125052005	D.Pavan Kumar	4	3	7	3	3	80.00	60.00		60.00	66.67	1	43	
4	2129125052007	J.Priyanka	5	5	8	5	5	100.00	100.00		100.00	86.67	1	58	
5	2129125052008	K.Lakshmi	3	4	5	4	5	60.00	80.00		80.00	66.67	4	38	
6	2129125052009	S.Manohar	NA	4	6	3	5	0.00	60.00		80.00	73.33	1	42	
7	2129125052010	Sk.Karimunnisa	3	4	5	4	5	60.00	80.00		80.00	66.67	1	38	
<b>No. of Students Attempted</b>								6	7		7	7	7	7	
<b>Scores above 40%</b>								5	7		7	7	2	7	
<b>Attainment %</b>								83.33	100.00		100.00	100.00	28.57	100.00	
<b>Attainment on 3 Point Scale</b>								2.50	3.00		3.00	3.00	0.86	3.00	
<b>Attainment Levels</b>								3	3	NA	3	3	0	3	

Attainment %	Attainment Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0

Direct Assessment				
	Int. Avg	Attendance	External Marks	Avg
CO 1	3	0	3	2.85
CO 2	3	0	3	2.85
CO 3	NA	0	3	2.81
CO 4	3	0	3	2.85
CO 5	3	0	3	2.85

Indirect Assessment								
S.No	CO Number	Course End Survey Scale					Weighted Avg	Weighted Avg. in 3 point scale
		5	4	3	2	1		
1	CO 1	0	1	2	1	3	2.14	1.29
2	CO 2	0	0	2	3	2	2	1.2
3	CO 3	0	2	3	2	0	3	1.8
4	CO 4	0	2	4	0	1	3	1.8
5	CO 5	0	0	5	2	0	2.71	1.63

CO Attainment			
	DA	IDA	Avg
CO 1	2.85	1.29	2.69
CO 2	2.85	1.20	2.69
CO 3	2.81	1.80	2.71
CO 4	2.85	1.80	2.75
CO 5	2.85	1.63	2.73

CO - PO Mapping (Weightage)								
CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	1	2	1	2	3	1	1	1
CO2	2	2	1	2	3	2	2	2
CO3	2	2	1	2	2	3	2	1
CO4	2	1	1	3	3	2	1	2
CO5	2	1	1	2	3	2	1	2

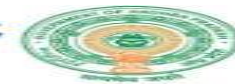


## Wpi Calculation

Wpi for PO 1 Formula = (Attnmt value of CO1 \* Weightage of CO 1 in PO 1) +.....(Attnmt value of CO 7 \* Weightage of CO 75 in PO1)/(weight of CO 1 in PO 1+ .....+weight of CO 7 in PO 1)

### PO Attainmnet

S.No	CO Number	Attainment	PO 1	Co attnmt Value *PO 1	PO 2	Co attnmt Value *PO 2	PO 3	Co attnmt Value *PO 3	PO 4	Co attnmt Value *PO4	PO 5	Co attnmt Value *PO5	PO 6	Co attnmt Value *PO 6	PO 7	Co attnmt Value *PO 7	PO 8	Co attnmt Value *PO 8	Sum of PO Attainment	Average % of PO Attainment
1	CO 1	2.69	1	2.69	2	5.39	1	2.69	2	5.39	3	8.08	1	2.69	1	2.69	1	2.69		
2	CO 2	2.69	2	5.37	2	5.37	1	2.69	2	5.37	3	8.06	2	5.37	2	5.37	2	5.37		
3	CO 3	2.71	2	5.42	2	5.42	1	2.71	2	5.42	2	5.42	3	8.13	2	5.42	1	2.71		
4	CO 4	2.75	2	5.49	1	2.75	1	2.75	3	8.24	3	8.24	2	5.49	1	2.75	2	5.49		
5	CO 5	2.73	2	5.46	1	2.73	1	2.73	2	5.46	3	8.18	2	5.46	1	2.73	2	5.46		
			9	24.43	8	21.65	5	13.56	11	29.87	14	37.98	10	27.14	7	18.96	8	21.72		
PO Attainment Value (in 3 point scale)				2.71		2.71		2.71		2.72		2.71		2.71		2.71		2.72	21.7	2.71
PO Attainment Value (in percentages)				90.49		90.22		90.42		90.52		90.42		90.48		90.28		90.50		90.42



**CO - PO ATTAINMENT**  
**2021-2022 Admitted Batch**

CLASS :- I B.Sc

SEMESTER - I

SUBJECT :- Telugu

FACULTY :- Dr.K.V.Santha Kumari

			Mid - I				Assignment				Student Seminar				CO 1	CO 2	CO 3	CO 4	CO 5	CO 6	CO 7	Attendance	External Marks			
CO Number			4																							
Question No			1																							
Max. Marks			10																							
S.No.	HT Number	Name of the Student	Marks Obtained				Marks Obtained												Marks Obtained							
1	2129125052002	DVN Raju	4							3																
2	2129125052004	Ch.Dijendra Kumari	8							4																
3	2129125052005	D.Pavan Kumar	8							4																
4	2129125052007	J.Priyanka	8								4															
5	2129125052008	K.Lakshmi	8							4																
6	2129125052009	S.Manohar	4							3																
7	2129125052010	Sk.Karimunnisa	8								4															
<b>No. of Students Attempted</b>													7	4	2	7								7	7	
<b>Scores above 40%</b>													5	4	2	7									3	7
<b>Attainment %</b>													71.43	100.00	100.00	100.00									42.86	100.00
<b>Attainment on 3 Point Scale</b>													2.14	3	3	3									1.29	3.00
<b>Attainment Levels</b>													3	3	3	3	NA	NA	NA						1	3

Attainment %	Attainment Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0

Direct Assessment				
	Int. Avg	Attendance	External Marks	Avg
CO 1	3	1	3	2.90
CO 2	2	1	3	2.70
CO 3	NA	1	3	2.88
CO 4	3	1	3	2.90
CO 5	NA	1	3	2.88

Indirect Assessment								
S.No	CO Number	Course End Survey Scale					Weighted Avg	Weighted Avg. in 3 point scale
		5	4	3	2	1		
1	CO 1	5	1	1	0	0	4.57	2.74
2	CO 2	3	2	2	0	0	4.14	2.49
3	CO 3	5	2	0	0	0	4.71	2.83
4	CO 4	6	1	0	0	0	4.86	2.91
5	CO 5	3	2	2	0	0	4.14	2.49

CO Attainment			
	DA	IDA	Avg
CO 1	2.90	2.742857143	2.88
CO 2	2.70	2.485714286	2.68
CO 3	2.90	2.828571429	2.89
CO 4	2.90	2.914285714	2.90
CO 5	2.90	2.485714286	2.86

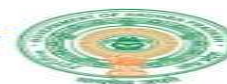
CO - PO Mapping (Weightage)								
CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	3	1	3	2	3	1	2	2
CO2	1	2	1	2	1	2	1	2
CO3	3	1	1	1	3	1	3	1
CO4	1	1	1	1	1	1	3	1
CO5	2	1	1	1	1	1	1	3

## Wpi Calculation

Wpi for PO 1 Formula = (Attnmt value of CO1 \* Weightage of CO 1 in PO 1) +.....(Attnmt value of CO 7 \* Weightage of CO 75 in PO1 )/(weight of CO 1 in PO 1+ .....+weight of CO 7 in PO 1)

### PO Attainmnet

S.No	CO Number	Attainment	PO 1	Co attnmt Value *PO 1	PO 2	Co attnmt Value *PO 2	PO 3	Co attnmt Value *PO 3	PO 4	Co attnmt Value *PO4	PO 5	Co attnmt Value *PO5	PO 6	Co attnmt Value *PO 6	PO 7	Co attnmt Value *PO 7	PO 8	Co attnmt Value *PO 8	Sum of PO Attainment	Average % of PO Attainment
1	CO 1	2.88	3	8.65	1	2.88	3	8.65	2	5.77	3	8.65	1	2.88	2	5.77	2	5.77		
2	CO 2	2.68	1	2.68	2	5.36	1	2.68	2	5.36	1	2.68	2	5.36	1	2.68	2	5.36		
3	CO 3	2.89	3	8.68	1	2.89	1	2.89	1	2.89	3	8.68	1	2.89	3	8.68	1	2.89		
4	CO 4	2.90	1	2.90	1	2.90	1	2.90	1	2.90	1	2.90	1	2.90	3	8.70	1	2.90		
5	CO 5	2.86	2	5.72	1	2.86	1	2.86	1	2.86	1	2.86	1	2.86	1	2.86	3	8.58		
			10	28.63	6	16.89	7	19.98	7	19.78	9	25.77	6	16.89	10	28.69	9	25.50		
PO Attainment Value (in 3 point scale)				2.86		2.88		2.85		2.83		2.86		2.82		2.87		2.83	22.81	2.85
PO Attainment Value (in percentages)				95.43		96.14		95.16		94.18		95.44		93.86		95.63		94.43		95.03



**CO - PO ATTAINMENT**  
**2021-2022 Admitted Batch**

CLASS :- I B.Sc

SEMESTER - I

SUBJECT :- MATHEMATIS

FACULTY :- M. VENKATESWARA RAO

			Mid - I			Assignment	Student Seminar	CO1	CO2	CO3	CO4	CO5	Attendance	External Marks		
		CO Number	2	1	2	2	4	CO Atmt	CO Atmt	CO Atmt	CO Atmt	CO Atmt			5	75
		Question No	1	2	3	1	1									
		Max. Marks	15	15	15	5	5									
S.No.	HT Number	Name of the Student	Marks Obtained			Marks Obtained							Marks Obtained			
1	2129125052004	Ch.Dijendra Kumari	15		12	5	5		91.43		100.00		5	45		
2	2129125052005	D.Pavan Kumar	15	15		5	5	100.00	100.00		100.00		5	75		
3	2129125052007	J.Priyanka	10	10		5	5	66.67	75.00		100.00		5	30		
4	2129125052008	K.Lakshmi	10	10		5	5	66.67	75.00		100.00		5	14		
5	2129125052009	S.Manohar	10		10	5	5		71.43		100.00		5	0		
6	2129125052010	Sk.Karimunnisa	15		15	5	5		100.00		100.00		5	0		
<b>No. of Students Attempted</b>								3	6		6		6	6		
<b>Scores above 40%</b>								3	6		6		6	3		
<b>Attainment %</b>								100.00	100.00		100.00		100.00	50.00		
<b>Attainment on 3 Point Scale</b>								3.00	3.00		3.00		3.00	1.50		
<b>Attainment Levels</b>								3	3	NA	3	NA	3	1		

Attainment %	Attainmnet Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0

Direct Assessment				
	Int. Avg	Attendance	External Marks	Avg
CO 1	3	3	1	1.50
CO 2	3	3	1	1.50
CO 3	NA	3	1	1.13
CO 4	3	3	1	1.50
CO 5	NA	3	1	1.13

Indirect Assessment								
S.No	CO Number	Course End Survey Scale					Weighted Avg	Weighted Avg. in 3 point scale
		5	4	3	2	1		
1	CO 1	5	0	0	0	0	5	3
2	CO 2	5	0	0	0	0	5	3
3	CO 3	0	5	0	0	0	4	2.4
4	CO 4	4	1	0	0	0	4.8	2.88
5	CO 5	3	2	0	0	0	4.6	2.76

CO Attainment			
	DA	IDA	Avg
CO 1	1.50	3	1.65
CO 2	1.50	3	1.65
CO 3	1.13	2.4	1.25
CO 4	1.50	2.88	1.64
CO 5	1.13	2.76	1.29

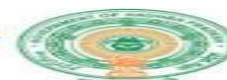
CO - PO Mapping (Weightage)								
CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	3	1	2	1	1	2	1	1
CO2	2	1	3	1	1	1	2	1
CO3	1	3	2	2	2	1	1	2
CO4	1	2	1	3	3	1	1	1
CO5	1	2	1	1	1	1	2	1

### Wpi Calculation

Wpi for PO 1 Formula = (Attnmt value of CO1 \* Weightage of CO 1 in PO 1) +.....(Attnmt value of CO 7 \* Weightage of CO 75 in PO1 )/(weight of CO 1 in PO 1+ .....+weight of CO 7 in PO 1)

#### PO Attainmnet

S.No	CO Number	Attainment	PO 1	Co attnmt Value *PO 1	PO 2	Co attnmt Value *PO 2	PO 3	Co attnmt Value *PO 3	PO 4	Co attnmt Value *PO4	PO 5	Co attnmt Value *PO5	PO 6	Co attnmt Value *PO 6	PO 7	Co attnmt Value *PO 7	PO 8	Co attnmt Value *PO 8	Sum of PO Attainment	Average % of PO Attainment
1	CO 1	1.65	3	4.95	1	1.65	2	3.30	1	1.65	1	1.65	2	3.30	1	1.65	1	1.65		
2	CO 2	1.65	2	3.30	1	1.65	3	4.95	1	1.65	1	1.65	1	1.65	2	3.30	1	1.65		
3	CO 3	1.25	1	1.25	3	3.76	2	2.51	2	2.51	2	2.51	1	1.25	1	1.25	2	2.51		
4	CO 4	1.64	1	1.64	2	3.28	1	1.64	3	4.91	3	4.91	1	1.64	1	1.64	1	1.64		
5	CO 5	1.29	1	1.29	2	2.58	1	1.29	1	1.29	1	1.29	1	1.29	2	2.58	1	1.29		
			7	11.14	7	10.33	8	12.39	7	10.72	7	10.72	5	7.84	5	7.84	5	7.44		
PO Attainment Value (in 3 point scale)				<b>1.59</b>		<b>1.48</b>		<b>1.55</b>		<b>1.53</b>		<b>1.53</b>		<b>1.57</b>		<b>1.57</b>		<b>1.49</b>	<b>12.30</b>	<b>1.54</b>
PO Attainment Value (in percentages)				<b>53.05</b>		<b>49.21</b>		<b>51.64</b>		<b>51.04</b>		<b>51.04</b>		<b>52.27</b>		<b>52.27</b>		<b>49.62</b>		<b>51.27</b>



**CO - PO ATTAINMENT**  
**2021-2022 Admitted Batch**

Class :- I B.Sc

Semester - I

Subject :- Physics

Faculty :- Dr.Y.N.Ch.Ravi Babu

			Mid - I					Mid - II					Assignment					Student Seminar					CO1	CO2	CO3	CO4	CO5	CO6	CO7	Attendance	External Marks									
CO Number			1	3	4	7	2																																	
Question No			1(a),3	1(b)	2(a),4	2(b),5	6																																	
Max. Marks			15	10	15	15	5																																	
S.No.	HT Number	Name of the Student	Marks Obtained										Marks Obtained										Marks Obtained							Marks Obtained										
1	2129125052002	DVN Raju	9		13	5																									65.00			86.67			100.00	33.33	3	1
2	2129125052004	Ch.Dijendra Kumari	15		10	5																									100.00	80.00		66.67			50.00		5	52
3	2129125052005	D.Pavan Kumar	10		5	14																									66.67	100.00		33.33			95.00		5	47
4	2129125052007	J.Priyanka	14			15																									93.33						100.00		4	44
5	2129125052008	K.Lakshmi			5	15																										100.00		33.33			100.00		4	44
6	2129125052009	S.Manohar	9		13	5																									60.00			86.67			100.00	45.00	3	2
7	2129125052010	Sk.Karimunnisa	15		9		5																								100.00	100.00		60.00			100.00		4	30
<b>No. of Students Attempted</b>																6	4		6			2	7	7	7															
<b>Scores above 40%</b>																6	4		4			2	6	7	5															
<b>Attainment %</b>																100.00	100.00		66.67			100.00	85.71	100.00	71.43															
<b>Attainment on 3 Point Scale</b>																3.00	3.00		2.00			3.00	2.57	3.00	2.14															
<b>Attainment Levels</b>																3	3		2			3	3	3	3															

Attainment %	Attainment Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0



### Direct Assessment

	Int. Avg	Attendance	External Marks	Avg
CO 1	3	3	3	3.00
CO 2	3	3	3	3.00
CO3	NA	3	3	3.00
CO 4	2	3	3	2.80
CO5	NA	3	3	3.00
CO 6	3	3	3	3.00
CO 7	3	3	3	3.00

### Indirect Assessment

S.No	CO Number	Course End Survey Scale					Weighted Avg	Weighted Avg. in 3 point scale
		5	4	3	2	1		
1	CO 1	5	1	0	1	0	4.43	2.66
2	CO 2	6	0	1	0	0	4.71	2.83
3	CO3	4	3	0	0	0	4.57	2.74
4	CO 4	5	1	1	0	0	4.57	2.74
5	CO5	6	1	0	0	0	4.57	2.74
6	CO 6	5	2	0	0	0	4.71	2.83
7	CO 7	7	0	0	0	0	5	2.83

### CO Attainment

	DA	IDA	Avg
CO 1	3.00	2.66	2.97
CO 2	3.00	2.83	2.98
CO3	3.00	2.74	2.97
CO 4	2.80	2.74	2.79
CO5	3	2.74	2.97
CO 6	3.00	2.83	2.98
CO 7	3.00	2.83	2.98

### CO - PO Mapping (Weightage)

CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	3	1	1	1	1	1	1	1
CO2	1	3	1	2	1	2	1	1
CO3	1	1	1	1	3	1	1	1
CO4	1	1	1	1	1	1	1	3
CO5	1	1	3	1	1	1	1	1
CO6	1	1	2	1	1	1	1	1
CO7	1	3	1	1	2	3	2	1

## Wpi Calculation

**Wpi for PO 1 Formula = (Attnmt value of CO1 \* Weightage of CO 1 in PO 1) +.....(Attnmt value of CO 7 \* Weightage of CO 75 in PO1 )/(weight of CO 1 in PO 1+ .....+weight of CO 7 in PO 1)**

## PO Attainment

S.No	CO Number	Attainment	PO 1	Co attnmt Value *PO 1	PO 2	Co attnmt Value *PO 2	PO 3	Co attnmt Value *PO 3	PO 4	Co attnmt Value *PO4	PO 5	Co attnmt Value *PO5	PO 6	Co attnmt Value *PO 6	PO 7	Co attnmt Value *PO 7	PO 8	Co attnmt Value *PO 8	Sum of PO Attainment	Average % of PO Attainment
1	CO 1	2.97	3	8.90	1	2.97	1	2.97	1	2.97	1	2.97	1	2.97	1	2.97	1	2.97		
2	CO 2	2.98	1	2.98	3	8.95	1	2.98	2	5.97	1	2.98	2	5.97	1	2.98	1	2.98		
3	CO 4	2.79	1	2.79	1	2.79	1	2.79	1	2.79	1	2.79	1	2.79	1	2.79	3	8.38		
4	CO 6	2.98	1	2.98	1	2.98	2	5.97	1	2.98	1	2.98	1	2.98	1	2.98	1	2.98		
5	CO 7	2.98	1	2.98	3	8.95	1	2.98	1	2.98	2	5.97	3	8.95	2	5.97	1	2.98		
			<b>9</b>	<b>26.61</b>	<b>11</b>	<b>32.61</b>	<b>10</b>	<b>29.64</b>	<b>8</b>	<b>23.66</b>	<b>10</b>	<b>29.61</b>	<b>10</b>	<b>29.62</b>	<b>8</b>	<b>23.66</b>	<b>9</b>	<b>26.26</b>		
<b>PO Attainment Value (in 3 point scale)</b>				<b>2.96</b>		<b>2.96</b>		<b>2.96</b>		<b>2.96</b>		<b>2.96</b>		<b>2.96</b>		<b>2.96</b>		<b>2.92</b>	<b>23.64</b>	<b>2.95</b>
<b>PO Attainment Value (in percentages)</b>				<b>98.54</b>		<b>98.81</b>		<b>98.80</b>		<b>98.57</b>		<b>98.69</b>		<b>98.74</b>		<b>98.57</b>		<b>97.27</b>		<b>98.50</b>



**CO - PO ATTAINMENT**  
**2021-2022 Admitted Batch**

Class :- I B.Sc

Semester - I

Subject :- Chemistry

Faculty :- K.Sujatha

			Mid - I					Mid - II					Assignment					Student Seminar					CO1	CO2	CO3	CO 4	CO 5	CO 6	CO 7	Attend ance	Exter nal Mar ks		
CO Number			1	2	3	1	2																										
Question No			1,2, 7,8	3, 4, 6	5	9,12, 13	10,11																										
Max. Marks			20	15	5	30	20																										
S. N o.	HT Number	Name of the Student	Marks Obtained										Marks Obtained																	Marks Obtained			
1	212912505 2002	DVN Raju	15	10		7	13																										
2	212912505 2004	Ch.Dijendra Kumari	15	10		26	16																										
3	212912505 2005	D.Pavan Kumar	10	10	5	30	20																										
4	212912505 2007	J.Priyanka	10	10	5	30	20																										
5	212912505 2008	K.Lakshmi	10	10	5	30	20.0																										
6	212912505 2009	S.Manohar	15	10		26	16																										
7	212912505 2010	Sk.Karimun nisa	10	10	5	30	20																										
			No. of Students Attempted																				7	7	7							7	7
			Scores above 40%																				7	7	7							7	2
			Attainment %																				100	100	100							100.00	28.5
			Attainment on 3 Point Scale																				3.0	3.0	3.0							3.00	0.86
			Attainment Levels																				3	3	3	NA	NA	NA	NA			3	0

Attainment %	Attainment Level
≥ 70%	3
55% to 69%	2
40% to 54%	1
< 40%	0

Direct Assessment				
	Int. Avg	Attendance	External Marks	Avg
CO 1	3	3	0	0.75
CO 2	3	3	0	0.75
CO 3	3	3	0	0.75

Indirect Assessment								
S.No	CO Number	Course End Survey Scale					Weighted Avg	Weighted Avg. in 3 point scale
		5	4	3	2	1		
1	CO 1	4	2	1	0	0	4.42	2.65
2	CO 2	3	4	0	0	0	4.42	2.65
3	CO 3	3	3	1	0	0	4.28	2.57

CO Attainment			
	DA	IDA	Avg
CO 1	0.75	2.6	0.94
CO 2	0.75	2.65	0.94
CO 3	0.75	2.57	0.93

CO - PO Mapping (Weightage)								
CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8
CO1	3	1	1	1	1	1	1	2
CO2	1	1	3	1	1	1	2	2
CO3	1	2	1	3	1	2	1	1

## Wpi Calculation

**Wpi for PO 1 Formula = (Attnmt value of CO1 \* Weightage of CO 1 in PO 1) +.....(Attnmt value of CO 7 \* Weightage of CO 75 in PO1 )/(weight of CO 1 in PO 1+ .....+weight of CO 7 in PO 1)**

### PO Attainment

S.No	CO Number	Attainment	PO 1	Co attnmt Value *PO 1	PO 2	Co attnmt Value *PO 2	PO 3	Co attnmt Value *PO 3	PO 4	Co attnmt Value *PO4	PO 5	Co attnmt Value *PO5	PO 6	Co attnmt Value *PO 6	PO 7	Co attnmt Value *PO 7	PO 8	Co attnmt Value *PO 8	Sum of PO Attainment	Average % of PO Attainment
1	CO 1	0.94	3	2.82	1	0.94	1	0.94	1	0.94	1	0.94	1	0.94	0	0.00	0	0.00		
2	CO 2	0.94	1	0.94	1	0.94	3	2.82	1	0.94	1	0.94	1	0.94	0	0.00	0	0.00		
3	CO 3	0.93	1	0.93	2	1.86	1	0.93	3	2.80	1	0.93	2	1.86	0	0.00	0	0.00		
			5	4.7	4	3.75	5	4.70	5	4.68	3	2.81	4	3.75	4	3.75	5	4.70		
<b>PO Attainment Value (in 3 point scale)</b>				<b>0.94</b>		<b>0.94</b>		<b>0.94</b>		<b>0.94</b>		<b>0.94</b>		<b>0.94</b>		<b>0.94</b>		<b>0.94</b>	<b>7.50</b>	<b>0.94</b>
<b>PO Attainment Value (in percentages)</b>				<b>31.30</b>		<b>31.21</b>		<b>31.30</b>		<b>31.19</b>		<b>31.26</b>		<b>31.21</b>		<b>31.29</b>		<b>31.30</b>		<b>31.26</b>